

REMARKS

Claims 1, 5, 8-9, 12, 13, and 17-19 are pending in this application.

The foregoing amendments and following remarks are believed to be fully responsive to the outstanding office action, and are believed to place the application in condition for allowance.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 9-14, 17-18, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Bates ('999) reference in view of the Moffatt ('257) reference. Claims 10, 11 and 20 are cancelled.

Independent Claim 1 has been amended to point out more clearly a coating composition for application on an ink jet printed porous substrate for improving the waterfastness of the ink jet image comprising 0.5 % to 10% by weight based on a 100% weight basis of the total composition of an ethoxylated polyethyleneimine, an amount of a pH modifier capable of maintaining the pH of the coating composition between about 8.8 and 9.1, up to about 1% by weight of a thickening additive, about 0.5% to 5% by weight of an electrolyte, about 0.05% to 0.5% by weight of a surfactant, and water.

The formulation has the benefit of an ability to control pH while surprising smoothly coating to the substrate for an even finish. Additionally, the thickening additive when blended with the polyethyleneimine causes no additional chemical reaction while surprisingly adding viscosity to the coating.

Bates teaches an ink composition that includes a colorant and at least one polymer selected from polyvinylimidazole, derivatives of polyvinylimidazole, copolymers of vinylimidazole and copolymers of vinylimidazole derivatives (collectively referred to as "PVI"). Bates is an ink composition, not a coating composition.

Bates uses a polymer that is soluble in the ink composition, meaning that the "...polymer will dissolve in the ink vehicle to form a one phase system". He notes that:

Similarly, the addition of polyethyleneimine ("PEI") to certain water-soluble dyes in inkjet inks is known to improve the waterfastness of the dyes on the receiving paper." (See Background of the Invention, page 20, first paragraph, of the USPTO website version of the issued patent.)

This teaching is never expanded to become a coating on paper with a uniform consistency.

To use the teaching of Bates for making a coating for a substrate would result in covering an entire sheet with ink containing PEI making one big blob of ink and no separate image could be viewed.

Although PEI is used in Bates, the use in ink to make images, not in a coating to hold ink forming an image onto a substrate.

Bates does not teach forming a coating with PEI on a substrate to improve the ability of ink to stick to the substrate.

Moffatt teaches an ink-jet ink composition that comprises modified pigment particles (macromolecular chromophores) having functional groups covalently attached for water solubility and reactive moieties covalently attached to the pigments. Moffatt does not teach utilizing a pH modifier in combination with the surfactant and electrolyte, as taught in the Applicant's composition. Moffatt does not add the missing elements of Bates by teaching a coating. Once again, just like Bates, Moffatt teaching forming an ink jet ink which sticks to substrates, not making a coating for a substrate that then holds the ink better onto the substrate.

As such, Applicants respectfully submit that the present invention is patentably distinct over the prior art cited above. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103 rejection of the claims is respectfully requested.

Claims 5 and 7-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Bates ('999) reference in view of the Moffatt ('257) reference and in further view of the Kashiwazaki ('098). Claim 7 is cancelled.

Kashiwazaki teaches a water-based ink for ink-jet recording, comprising a water-insoluble pigment, a dispersant for dispersing said pigment, a water-soluble organic solvent, and water. The dispersant in Kashiwazaki is either a copolymer with a hydrophilic part and a hydrophobic part and/or polyethyleneimine. Kashiwazaki does not make a coating for a substrate that grabs and holds the ink onto the substrate. See Column 5, lines 32 to 60 where Kashiwazaki teaching using a polymer in the ink, not in a coating for paper.

Kashiwazaki teaches making a water soluble resin (see column 6, lines 10-11). He does teach adding polyethyleneimine with its pH-stability to the water soluble resin which is used as a dispersant in the ink of the present invention (column 6, lines 33-39). Even though the “wiping resistance” of the ink is improved, it is improved by adding the PEI to the ink formulation, not into a coating composition that is then applied to a substrate which then receives the ink. Kashiwazaki does not add the missing elements of Bates and Moffatt.

As such, Applicants respectfully submit that the present invention is patentably distinct over the prior art cited above. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103 rejection of Claims 5 and 8 is respectfully requested.

Claim 19 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Bates ('999) reference in view of the Moffatt ('257) reference and in further view of the Hayes ('997).

Hayes teaches an ink composition for utilization in ink jet printing comprising an aqueous solution of a fluorescent pigment, a dye solubilizer, and butyl carbitol. Again, Hayes is an ink composition.

The ink composition of Hayes is not a coating composition for paper. Hayes does not teach utilizing a polymer like PEI, in combination with thickening additive to allow the coating to go smoothly onto the substrate, to eliminate molting, and to stabilize the viscosity of the coating prior to receiving the ink, which are significant benefits of this invention. Hayes does not add the missing elements of Bates and Moffatt.

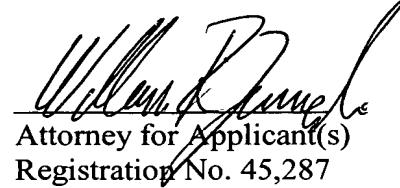
As such, Applicants respectfully submit that the present invention is patentably distinct over the prior art cited above. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103 rejection of Claim 19 is respectfully requested.

CONCLUSION

It is respectfully submitted that, in view of the above amendments and remarks, this application, with currently pending claims 1,5,8,9,12,13,17,18,19, is now in condition for allowance, prompt notice of which is earnestly solicited.

The Examiner is invited to call the undersigned in the event that a phone interview will expedite prosecution of this application towards allowance.

Respectfully submitted,



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